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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/669,663	09/26/2000	Katsuhito Fujimoto	826.1627/JDH	4750

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EXAMINER	
SAFAIPOUR, HOUSHANG	
ART UNIT	**PAPER NUMBER**
2622	4

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/669,663	Applicant(s) FUJIMOTO ET AL.	
	Examiner Houshang Safaipour	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-32 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10, 12, 13 & 15-32 is/are rejected.

7)☒ Claim(s) 11 and 14 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 26 September 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 12, 13 and 15-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Hongo et al. (U.S. Patent No. 4,903,316).

Regarding claim 1, Hongo et al. discloses an image processing apparatus, comprising: a background judgment device judging whether a target pixel is a background pixel using a standard deviation of gray level of pixels in a vicinity area of the target pixel on receipt of a multilevel image (col. 5, lines 22-24 and col. 3, lines 43-61).

Regarding claim 2, Hongo et al. discloses an image processing apparatus, comprising:

a background judgment device judging whether a target pixel is a background pixel using a gray level difference and a standard deviation of gray levels of pixels in a vicinity area of the target pixel on receipt of a multilevel image (col. 5, lines 22-24 and col. 3, lines 43-61).

Regarding claim 3, Hongo et al. discloses the apparatus according to claim 2, wherein the gray level difference is an amount which is calculated based on a difference between an average gray level of white pixels in the vicinity area of the target pixel and an average gray level of black pixels in the vicinity area of the target pixel (col. 3, lines 55-61).

Regarding claim 4, Hongo et al. discloses an image processing apparatus, comprising:

a background judgment device judging for each target pixel whether the target pixel is a

background pixel on receipt of a multilevel image; and a local binarization device locally binarizing the target pixel, judging which of a background and a stroke the target pixel belongs to, and outputting a binary image if it is judged that the target pixel is not the background pixel (abstract and col. 8, lines 10-17).

Regarding claim 5, Hongo et al. discloses the apparatus according to claim 4, wherein said local binarization device uses an amount which is calculated based on an average and a standard deviation of gray levels of pixels in the vicinity area of the target pixel as a binarization threshold for the target pixel (col. 3, lines 45-61).

Regarding claim 6, Hongo et al. discloses the apparatus according to claim 5, wherein the amount which is calculated based on the average and the standard deviation of the gray levels of the pixels in the vicinity area of the target pixel is calculated based on a sum of the average and a constant-multiple of the standard deviation (col. 5, lines 3-20).

Regarding claim 7, Hongo et al. discloses the apparatus according to claim 5, wherein the vicinity area of the target pixel is a rectangular area of N x N with a prescribed number of pixels N and the target pixel located at a center (col. 4, lines 59-66).

Regarding claim 8, Hongo et al. discloses the apparatus according to claim 4, wherein said background judgment device judges whether the target pixel is the background pixel, using a standard deviation of gray levels of pixels in the vicinity area of the target pixel (col. 5, lines 22-24 and col. 3, lines 43-61).

Regarding claim 9, Hongo et al. discloses the apparatus according to claim 8, wherein said background judgment device judges whether the target pixel is the background pixel under a background judgment condition of $\sigma < \sigma min$ with a as the standard deviation in the vicinity area

of the target pixel and a min as a prescribed constant (col. 4, lines 10-43).

Regarding claim 10, Hongo et al. discloses the apparatus according to claim 4, wherein said background judgment device judges whether the target pixel is the background pixel using a standard deviation of gray levels and a gray level difference of pixels in the vicinity area of the target pixel (col. 5, lines 22-24 and col. 3, lines 43-61).

Regarding claim 12, Hongo et al. discloses the apparatus according to claim 10, wherein said background judgment device judges whether the target pixel is the background pixel under a background judgment condition of $\Delta g < \Delta g$ min with Δ g as the gray level difference in the vicinity of the target pixel and Δ g min as a prescribed constant (col. 8, lines, 10-51) .

Regarding claim 13, Hongo et al. discloses the apparatus according to claim 10, wherein the gray level difference is an amount which is calculated based on a difference between an average gray level of white pixels in the vicinity area of the target pixel and an average gray level of black pixels in the vicinity area of the target pixel (col. 3, lines 55-61).

Regarding claim 15, Hongo et al. discloses the apparatus according to claim 4, further comprising:

a line element restriction device executing a process of the obtained binary image based on a ratio of black pixels in a shape-fixed line element mask including the target pixel and outputting a binary image (col. 8, line 10 through col. 9 line 49).

Regarding claims 16-19, 24 and 27 arguments analogous to those presented for claim 15 are applicable to claims 16-19, 24 and 27.

Regarding claim 20, Hongo et al. discloses the apparatus according to claim 4, further comprising:

a stroke separation device applying a partial pattern in a gray scale image corresponding to a black pixel joint element in the obtained binary image and separating strokes of different gray levels (col. 3, lines 45-61).

Regarding claim 21, Hongo et al. discloses the apparatus according to claim 20, wherein said stroke separation device judges whether to perform a stroke separation using one of an inter-class dispersion and a dispersion ratio between different strokes (col. 3, lines 45-61).

Regarding claim 22, Hongo et al. discloses the apparatus according to claim 4, wherein said local binarization device judges which of the background and the stroke a pixel, which is judged to be the background pixel by said background judgment device, belongs to based on a gray level of the pixel (col. 3, lines 45-61).

Regarding claims 23 and 31, arguments analogous to those presented for claim 4 are applicable to claims 23 and 31.

Regarding claims 25 and 28, arguments analogous to those presented for claim 20 are applicable to claims 25 and 28.

Regarding claims 26, 29 and 30, arguments analogous to those presented for claim 1 are applicable to claims 26, 29 and 30.

Regarding claim 32, arguments analogous to those presented for claims 1 and 4 are applicable to claim 32.

Allowable Subject Matter

Claims 11 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Houshang Safaipour whose telephone number is (703)306-4037. The examiner can normally be reached on Mon.-Thurs. from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L Coles, Sr. can be reached on (703)305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Houshang Safaipour
Patent Examiner
Art Unit 2622
June 24, 2004

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